



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,538	04/12/2001	Yuichi Takamine	36856.463	4327

7590 10/15/2002

Keating & Bennett LLP  
10400 Eaton Place, Suite 312  
Fairfax, VA 22030

EXAMINER
----------

SUMMONS, BARBARA

ART UNIT	PAPER NUMBER
----------	--------------

2817

DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/833,538

Applicant(s)

Takamine

Examiner

Boulosa Summons

Group Art Unit

2817

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 (three) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 8/1/01 (Drawings)
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-22 is/are pending in the application.
- ☐ Claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☒ Claim(s) 1, 2, 7, 11, 12, 16-20 and 22 is/are allowed.
- ☒ Claim(s) 3-6, 8-10, 13-15 and 21 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 8/1/01 is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 2817

## DETAILED ACTION

### *Drawings*

1. Figures 2, 4, and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see e.g. page 6, lines 25-27 and page 7, lines 1-6). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

2. Claims 16 and 19 are objected to because of the following informalities:

In claim 16, on line 4, in order to avoid possible confusion it appears that “vertical”, which is just a relative direction, should be changed to --series-- or --cascade--.

In claim 19, on line 4, in order to avoid possible confusion it appears that “output side” should be followed by --of the filter--. As the claim is now written, it begs the question the “input side and/or output side” of what? Also, any resonator of the “longitudinally coupled resonator-type...filter” could itself be considered a “series resonator” connected to an input and/or output thereof. Appropriate correction is required.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Art Unit: 2817

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

---

4. Claims 1, 2, 11, 12, 16, 17, 18, 19, 20 and 22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 9, 13, 14, 15, and 23 of copending Application No. 09/855,246.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 9 of the '246 application recites all of the limitations of claims 1, 2, and 11 of the instant application and additional structure, wherein a "period" that is shorter" (see claim 2 of the instant application) is equivalent to a "pitch" that is "narrower" (see claim 9, lns. 10-12 of the '246 application). Regarding claim 11, of the instant application, see the last five lines of claim 9 of the '246 application. Claim 23 of the '246 application recites a two-stage filter with every limitation of claims 16-18 of the instant application plus additional structure. Specifically, regarding claim 17 of the instant application, see the last five lines of claim 23 of the '246

Art Unit: 2817

application. Regarding claim 18, the period is different in “each” of the stages because there are exactly two stages in claim 23 of the ‘246 application. Claims 13, 14, and 15 of the ‘246 application recite each of the features of claims 9, 20, and 22, respectively of the instant application, wherein the filter in the communication apparatus of claim 15 of the ‘246 application would obviously be a band-pass filter as recited in claim 22 of the instant application. Regarding claim 12 of the instant application, the Examiner takes Official Notice that the recited substrate would have been an obvious art recognized equivalent piezoelectric substrate well known by one of ordinary skill in the art (see other cited art as evidence).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

---

5. Claims 1, 2, 16 and 22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7 and 8 of copending Application No. 09/878,935. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the ‘935 application recites all of the limitations of claims 1 and 2 of the instant application, plus additional structure. Claims 7 and 8 of the ‘935 application recite the limitations of claims 16 and 22 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 1, 2, 7, 12 and 20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application

Art Unit: 2817

No. 09/891,701. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 8 of the '701 application recites all of the limitations of claims 1, 2 and 20 of the instant application, plus additional structure. Regarding claim 12 of the instant application, such a substrate would have been an obvious art recognized equivalent as stated in an earlier rejection. Regarding claim 7 of the instant application, claim 8 of the '701 application states that the "first and third IDTs have an opposite phase to the phase of the second IDT" (see lns. 6-7). The Examiner takes Official Notice that it would have been obvious to one of ordinary skill that such a phase difference is formed either by providing the arrangement of opposite polarity fingers recited in instant claim 7, at an increase of one pitch distance to change the phase (see other prior art of record as evidence).

---

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

7. Claims 3-6, 8-10, 13-15 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Absent the Double Patenting rejections, the prior art of record does not disclose or fairly suggest a longitudinally coupled resonator-type surface acoustic wave (SAW) filter comprising

Art Unit: 2817

each of the specifically recited features, and especially including the structure recited in the last paragraph of claim 1, i.e., the different electrode finger periods. Although the same structure plus additional structure has been recited in the claims of the related applications as explained in the rejections above, the subject matter of the instant allowable claims is not recited in the claims of other related applications. It should be noted that it initially appeared that claims 1 and 9 of the 09/878,935 covered the same subject matter of claims 5 and 6 of the instant application. However, in the instant application the distances as “substantially equal to” the recited equation, and in the ‘935 application the distances are “deviated from” or “different from” the recited equations.

---

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ueda et al. U.S. 6,037,847 provides evidence of the obviousness and advantages of a 39 to 46 degree rotated  $\text{LiTaO}_3$  piezoelectric substrate (see e.g. the abstract).

Kawakatsu et al. U.S. 5,568,002 provides evidence of providing opposite phased transducers by providing opposite polarity fingers being the closest in adjacent transducers (see e.g. the section beginning at col. 5, ln. 62, and see fingers 72a and 73a in Fig. 3 vs. dummy fingers in Fig. 4).

Hirota U.S. 6,329,888 B1 discloses [Figs. 1(a) and 1(c)] some of the electrodes in an interdigital transducer (IDT) of a SAW filter being split electrode fingers (i.e. grounded fingers).

Art Unit: 2817

Takagi et al. U.S. 6,335,667 B1 discloses (see Fig. 1) a SAW longitudinally coupled resonator-type filter with an IDT 106 having a wider electrode finger 105 adjacent the neighboring IDT 104.

Yatsuda U.S. 5,521,453 discloses a longitudinally coupled SAW resonator-type filter 940 (see Fig. 17) with SAW resonators (71a,b, 72a,b) connected in series and in parallel at the input and output of the filter.

Noguchi U.S. 6,380,827 B1 discloses (see e.g. Fig. 2) a longitudinally coupled resonator-type SAW filter having two such resonators 205 and 206 cascade connected, and wherein the filter has SAW resonators 203 and 204 connected in series and in parallel at the filter input 201.

---

10. Any inquiry concerning this communication should be directed to Barbara Summons at telephone number (703) 308-4947, FAX no. (703) 308-7724, receptionist's no. (703) 308-0956.



Barbara Summons  
Patent Examiner  
Art Unit 2817

bs  
October 9, 2002